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LIFT Scholarship Exchange Experience for Innovation & Technology (SEE IT)
Sponsored by: WRF, WEF, and NACWA

TRIP REPORT

SCHOLARSHIP UTILITY: *City of Saco, Maine Water Resource Recovery Department*

SCHOLARSHIP UTILITY CONTACT: *Howard Carter, Director, hcarter@sacomaine.org*

ATTENDEES: *Howard Carter, Andrew Whitaker*

TRIP DATES: *April 17, 2019- April 19, 2019*

UTILITIES/SITES VISITED: *Inovair (<https://inovair.com>) and Blue Springs WWTP (www.bluespringsgov.com)*

TECHNOLOGIES/INNOVATIONS SEEN: *Inovair Turbo Blowers*

TRIP BACKGROUND and RATIONALE (250 WORDS): *What technology did you select to visit? What is the problem you are trying to address? How did you envision the LIFT SEE IT scholarship trip helping your utility?*

The City of Saco Water Resource Recovery Department chose to visit Inovair Turbo Blowers to address our needs in upgrading the air supply for our aeration basins. Our current equipment is becoming outdated and nearing the end of its service life. The high energy demands of supplying air eighteen feet below grade pushed us to find a novel energy efficient delivery method. Our vision in applying for the LIFT SEE IT scholarship was to examine a relatively old technology in motorsport and learn how it is being applied to the clean water industry.

TRIP SUMMARY (1 page max. Please include 10 photos and a 1-2 minute video montage from the trip. The video does not need to be professional, however if you have the means to create a professional video feel free to do so): *Why did you select the specific utility and technology for the visit? Based on your visit, do you think this technology/approach works for your utility? How useful was the trip in your decision making process? What were some of the trip highlights and takeaways?*

We chose Blue Springs WWTP as our visit site because of their proximity to Inovair and examine how they are using the newest of Inovair's technology. Inovair is a division of a much larger company which manufactures superchargers for the diverse motorsport industry. The parent company Procharger, manufactures blowers for vehicles producing more than 3500 horsepower; drag cars, offshore race boats, etc...



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The company is also involved with the United States Air Force and provides the same blowers for extreme duty environments, the technology is the same for both applications. The gear box driven blowers will provide us with an instant control response to our dissolved oxygen needs in the aeration basins. This will greatly improve our process control where-as our current multiple stage blowers cannot perform in this manner. The ability to start and stop the blowers will reduce our load on the electrical grid and reduce consumption. Additionally, Inovair's technology will allow us to perform at greater efficiencies while reducing our drive motor size from seventy-five horsepower to fifty horsepower. Projected payoff is in the three to five-year range.

The trip was beneficial to our decision-making process as we were able to directly inspect the units and see the wide array of applications in which these blowers are used. The units can be 100% made in the U.S.A. depending on control and motor components selected with most components manufactured on site.

One of the greatest takeaways involved a Procharger blower, same blower Inovair uses. They had a vehicle mishap with an offshore race boat and needed to clean the interior of the vessel from a liquid intrusion. They hooked up the intake of one of their blowers and effectively turned it into a vacuum. After running unknown materials through the intake of that blower, it served in a drag car for a successful season with no detrimental effects. The durability of the blower after having performed in an adverse situation and then to perform as it should was impressive. A wastewater blower intake is heavily filtered and would never see such abuse. The final highlight was being able to sit in and provide insight to the design engineer on their newest design along with Inovair reps that had yet to see the renderings. Overall a successful and fruitful trip and we are thankful for our selection to receive the scholarship.



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